

APPENDIX 300A -- PRINCIPLES OF BUDGETING FOR CAPITAL ASSET ACQUISITIONS

Introduction and Summary

The Administration plans to use the following principles in budgeting for capital asset acquisitions. These principles address planning, costs and benefits, financing, and risk management requirements that should be satisfied before a proposal for the acquisition of capital assets can be included in the Administration's budget. A Glossary describes key terms. OMB has also published the *Capital Programming Guide* (June 1997), a Supplement to this Circular. The *Guide* is a basic reference on principles and techniques for planning, budgeting, acquisition, and management of capital assets. Agencies should consult the *Guide* when preparing their capital plans and developing their budget requests from their capital plans.

The principles are organized in the following four sections:

- A. *Planning*. This section focuses on the need to ensure that capital assets support core/priority missions of the agency; the assets have demonstrated a projected return on investment that is clearly equal to or better than alternative uses of available public resources; the risk associated with the assets is understood and managed at all stages; and the acquisition is implemented in phased, successive segments, unless it can be demonstrated there are significant economies of scale at acceptable risk from funding more than one segment or there are multiple units that need to be acquired at the same time.
- B. *Costs and Benefits*. This section emphasizes that the asset should be justified primarily by benefit-cost analysis, including life-cycle costs; that all costs are understood in advance; and that cost, schedule, and performance goals are identified that can be measured using an earned value management system or similar system.
- C. *Principles of Financing*. This section stresses that useful segments are to be fully funded with regular or advance appropriations, or both; that as a general rule, planning segments should be financed separately from procurement of the asset; and that agencies are encouraged to aggregate assets in capital acquisition accounts and take other steps to accommodate lumpiness or "spikes" in funding for justified acquisitions.
- D. *Risk Management*. This section is to help ensure that risk is analyzed and managed carefully in the acquisition of the asset. Strategies can include separate accounts for capital asset acquisitions, the use of apportionment to encourage sound management, and the selection of efficient types of contracts and pricing mechanisms in order to allocate risk appropriately between the contractor and the Government. In addition, cost, schedule, and performance goals are to be controlled and monitored by using an earned value management system or a similar system; and if progress toward these goals is not met, there is a formal review process to evaluate whether the acquisition should continue or be terminated.

As defined here, capital assets are generally land, structures, equipment, and intellectual property (including software) that are used by the Federal Government, including weapon systems. Not included are grants to States or others for their acquisition of capital assets. A complete definition is provided in section 300.4.

A. Planning

Investments in major capital assets proposed for funding in the Administration's budget should:

1. Support core/priority mission functions that need to be performed by the Federal Government;
2. Be undertaken by the requesting agency because no alternative private sector or governmental source can support the function more efficiently;
3. Support work processes that have been simplified or otherwise redesigned to reduce costs, improve effectiveness, and make maximum use of commercial, off-the-shelf technology;
4. Demonstrate a projected return on the investment that is clearly equal to or better than alternative uses of available public resources. Return may include: improved mission performance in accordance with measures developed pursuant to the Government Performance and Results Act; reduced cost; increased quality, speed, or flexibility; and increased customer and employee satisfaction. Return should be adjusted for such risk factors as the project's technical complexity, the agency's management capacity, the likelihood of cost overruns, and the consequences of under- or non-performance.
5. For information technology investments, be consistent with Federal, agency, and bureau information architectures, which: integrate agency work processes and information flows with technology to achieve the agency's strategic goals; reflect the agency's technology vision; specify standards that enable information exchange and resource sharing, while retaining flexibility in the choice of suppliers and in the design of local work processes; and ensure that security is built into and funded as part of the system architecture in accordance with OMB Memorandum M-00-07: "Incorporating and Funding Security in Information Systems Investments (February 28, 2000)."
6. Reduce risk by: avoiding or isolating custom-designed components to minimize the potential adverse consequences on the overall project; using fully tested pilots, simulations, or prototype implementations when necessary before going to production; establishing clear measures and accountability for project progress; and, securing substantial involvement and buy-in throughout the project from the program officials who will use the system;
7. Be implemented in phased, successive segments as narrow in scope and brief in duration as practicable, each of which solves a specific part of an overall mission problem and delivers a measurable net benefit independent of future segments, unless it can be demonstrated that there are significant economies of scale at acceptable risk from funding more than one segment or there are multiple units that need to be acquired at the same time; and
8. Employ an acquisition strategy that appropriately allocates risk between the Government and the contractor, effectively uses competition, ties contract payments to accomplishments, and takes maximum advantage of commercial technology.

Prototypes require the same justification as other capital assets.

As a general presumption, OMB will recommend new or continued funding only for those capital asset investments that satisfy these criteria. Funding for those projects will be recommended on a phased basis by segment, unless it can be demonstrated that there are significant economies of scale at acceptable risk from funding more than one segment or there are multiple units that need to be acquired at the same time.

OMB recognizes that many agencies are in the middle of ongoing projects, and they may not be able immediately to satisfy the criteria. For those projects that do not satisfy the criteria, OMB will consider requests to use FY 2001 and FY 2002 funds to finance additional planning, as necessary, to support the establishment of realistic cost, schedule, and performance goals for the completion of the project. This planning could include: the redesign of work processes, the evaluation of alternative solutions, the development of information system architectures, and, if necessary, the purchase and evaluation of prototypes. Realistic goals are necessary for agency portfolio analysis to determine the viability of the project, to provide the basis for fully funding the project to completion, and setting the baseline for management accountability to deliver the project within goals.

Because OMB considers this information essential to agencies' long-term success, OMB will use this information both in preparing the Administration's budget and, in conjunction with cost, schedule, and performance data, as apportionments are made. Agencies are encouraged to work with their OMB representative to arrive at a mutually satisfactory process, format, and timetable for providing the requested information.

B. Costs and Benefits

The justification of the project should evaluate and discuss the extent to which the project meets the above criteria and should also include:

1. An analysis of the project's total life-cycle costs and benefits, including the total budget authority required for the asset, consistent with policies described in OMB Circular A-94: *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs* (October 1992);
2. An analysis of the risk of the project including how risks will be isolated, minimized, monitored, and controlled, and, for major programs, an evaluation and estimate by the Chief Financial Officer of the probability of achieving the proposed goals;
3. If, after the planning phase, the procurement is proposed for funding in segments, an analysis showing that the proposed segment is economically and programmatically justified--that is, it is programmatically useful if no further investments are funded, and in this application its benefits exceed its costs; and
4. Cost, schedule, and performance goals for the project (or the planning segment or useful asset being proposed) that can be measured throughout the acquisition process using a performance-based management system, e.g., Earned Value Management.

C. Principles of Financing

Principle 1: Full Funding

Budget authority sufficient to complete a useful segment of a capital project (or the entire capital project, if it is not divisible into useful segments) must be appropriated before any obligations for the useful segment (or project) may be incurred.

Explanation: Good budgeting requires that appropriations for the full costs of asset acquisition be enacted in advance to help ensure that all costs and benefits are fully taken into account at the time decisions are made to provide resources. Full funding with regular appropriations in the budget year also leads to tradeoffs within the budget year with spending for other capital assets and with spending for purposes other than capital assets. Full funding increases the opportunity to use performance-based fixed price contracts, allows for more efficient work planning and management of the capital project, and increases the accountability for the achievement of the baseline goals.

When full funding is not followed and capital projects or useful segments are funded in increments, without certainty if or when future funding will be available, the result is sometimes poor planning, acquisition of assets not fully justified, higher acquisition costs, cancellation of major projects, the loss of sunk costs, or inadequate funding to maintain and operate the assets.

Principle 2: Regular and Advance Appropriations

Regular appropriations for the full funding of a capital project or a useful segment of a capital project in the budget year are preferred. If this results in spikes that, in the judgment of OMB, cannot be accommodated by the agency or the Congress, a combination of regular and advance appropriations that together provide full funding for a capital project or a useful segment should be proposed in the budget.

Explanation: Principle 1 (Full Funding) is met as long as a combination of regular and advance appropriations provide budget authority sufficient to complete the capital project or useful segment. Full funding in the budget year with regular appropriations alone is preferred because it leads to tradeoffs within the budget year with spending for other capital assets and with spending for purposes other than capital assets. In contrast, full funding for a capital project over several years with regular appropriations for the first year and advance appropriations for subsequent years may bias tradeoffs in the budget year in favor of the proposed asset because with advance appropriations the full cost of the asset is not included in the budget year. Advance appropriations, because they are scored in the year they become available for obligation, may constrain the budget authority and outlays available for regular appropriations of that year.

If, however, the lumpiness caused by regular appropriations cannot be accommodated within an agency or Appropriations Subcommittee, advance appropriations can ameliorate that problem while still providing that all of the budget authority is enacted in advance for the capital project or useful segment. The latter helps ensure that agencies develop appropriate plans and budgets and that all costs and benefits are identified prior to providing resources. In addition, amounts of advance appropriations can be matched to funding requirements for completing natural components of the useful segment. Advance appropriations have the same benefits as regular appropriations for improved planning, management, and accountability of the project.

Principle 3: Separate Funding of Planning Segments

As a general rule, planning segments of a capital project should be financed separately from the procurement of a useful asset.

Explanation: The agency must have information that allows it to plan the capital project, develop the design, and assess the benefits, costs, and risks before proceeding to procurement of the useful asset. This is especially important for high risk acquisitions. This information comes from activities, or planning segments, that include but are not limited to market research of available solutions, architectural drawings, geological studies, engineering and design studies, and prototypes. The construction of a prototype that is a capital asset, because of its cost and risk, should be justified and planned as carefully as the project itself. The process of gathering information for a capital project may consist of one or more planning segments, depending on the nature of the asset. Funding these segments separately will help ensure that the necessary information is available to establish cost, schedule, and performance goals before proceeding to procurement.

If budget authority for planning segments and procurement of the useful asset are enacted together, OMB may wish to apportion budget authority for one or several planning segments separately from procurement of the useful asset.

Principle 4: Accommodation of Lumpiness or "Spikes" and Separate Capital Acquisition Accounts

To accommodate lumpiness or "spikes" in funding justified capital acquisitions, agencies, working with OMB, are encouraged to aggregate financing for capital asset acquisitions in one or several separate capital acquisition budget accounts within the agency, to the extent possible within the agency's total budget request.

Explanation: Large, temporary, year-to-year increases in budget authority, sometimes called lumps or spikes, may create a bias against the acquisition of justified capital assets. Agencies, working with OMB, should seek ways to avoid this bias and accommodate such spikes for justified acquisitions. Aggregation of capital acquisitions in separate accounts may:

- Reduce spikes within an agency or bureau by providing roughly the same level of spending for acquisitions each year;
- Help to identify the source of spikes and to explain them. Capital acquisitions are more lumpy than operating expenses; and with a capital acquisition account, it can be seen that an increase in operating expenses is not being hidden and attributed to one-time asset purchases;
- Reduce the pressure for capital spikes to crowd out operating expenses; and
- Improve justification and make proposals easier to evaluate, since capital acquisitions are generally analyzed in a different manner than operating expenses (e.g., capital acquisitions have a longer time horizon of benefits and life-cycle costs).

D. Risk Management

Risk management should be central to the planning, budgeting, and acquisition process. Failure to analyze and manage the inherent risk in all capital asset acquisitions may contribute to cost overruns, schedule shortfalls, and acquisitions that fail to perform as expected. For each major capital project, a risk analysis that includes how risks will be isolated, minimized, monitored, and controlled may help prevent these problems.

The project cost, schedule and performance goals established through the planning phase of the project are the basis for approval to procure the asset and the basis for assessing risk. During the procurement phase, performance-based management systems (earned value or similar system) must be used to provide contractor and Government management visibility on the achievement of, or deviation from, goals until the asset is accepted and operational. If goals are not being met, performance-based management systems allow for early identification of problems, potential corrective actions, and changes to the original goals needed to complete the project and necessary for agency portfolio analysis decisions. These systems also allow for Administration decisions to recommend meaningful modifications for increased funding to the Congress, or termination of the project, based on its revised expected return on investment in comparison to alternative uses of the funds. Agencies must ensure that the necessary acquisition strategies are implemented to reduce the risk of cost escalation and the risk of failure to achieve schedule and performance goals. These strategies may include:

1. Having budget authority appropriated in separate capital asset acquisition accounts;
2. Apportioning budget authority for a useful segment;
3. Establishing thresholds for cost, schedule, and performance goals of the acquisition, including return on investment, which if not met may result in cancellation of the acquisition;
4. Selecting types of contracts and pricing mechanisms that are efficient and that provide incentives to contractors in order to allocate risk appropriately between the contractor and the Government;
5. Monitoring cost, schedule, and performance goals for the project (or the planning segment or useful asset being proposed) using a performance-based management system, e.g., Earned Value Management System.
6. If progress is not within 90 percent of goals, or if new information is available that would indicate a greater return on investment from alternative uses of funds, instituting senior management review of the project through portfolio analysis to determine the continued viability of the project with modifications, or the termination of the project, and the start of exploration for alternative solutions if it is necessary to fill a gap in agency strategic goals and objectives.

E. Glossary

Appropriations, regular annual or advance, provide budget authority that permits Government officials to incur obligations that result in immediate or future outlays of Government funds.

Regular annual appropriations are:

- Enacted normally in the current year;
- Scored entirely in the budget year; and
- Available for obligation in the budget year and subsequent years if specified in the language. (See "***Availability***," below)

Advance appropriations may be accompanied by regular annual appropriations to provide funds available for obligation in the budget year as well as subsequent years. Advance appropriations are:

- Enacted normally in the current year;
- Scored after the budget year (e.g., in each of one, two, or more later years, depending on the language); and
- Available for obligation in the year scored and subsequent years if specified in the language. (See "***Availability***," below.)

Availability refers to the period during which appropriations may be legally obligated. Appropriations made in appropriations acts are available for obligation only in the budget year, unless the language specifies that an appropriation is available for a longer period. If the language specifies that the funds are to remain available until the end of a certain year beyond the budget year, the availability is said to be "multi-year." If the language specifies that the funds are to remain available until expended, the availability is said to be "no-year." Appropriations for major procurements and construction projects are typically made available for multiple years or until expended.

Earned Value Management (EVM) is a project management tool that effectively integrates the project scope of work with schedule and cost elements for optimum project planning and control. The qualities and operating characteristics of earned value management systems are described in *EIA STANDARD: Earned Value Management Systems*, American National Standards Institute (ANSI) ANSI/EIA-748-1998, approved May 19, 1998 (see Appendix 300B).

Funding (full funding and incremental (partial) funding) is defined in section 300.4.

Risk Management is an organized method of identifying and measuring risk and developing, selecting, and managing options for handling these risks. Before beginning any procurement, managers should review and revise as needed the acquisition plan to ensure that risk management techniques considered in the planning phase are still appropriate.

There are three key principles for managing risk when procuring capital assets: (1) avoiding or limiting the amount of development work (i.e., use off-the-shelf technology, if feasible); (2) making effective use of competition and financial incentives; and (3) establishing a performance-based acquisition management system that provides for accountability for program successes and failures, such as an earned value system or similar system.

There are several types of risk an agency should consider as part of risk management. The types of risk include:

- Schedule risk;
- Cost risk;
- Technical feasibility;
- Risk of technical obsolescence;
- Dependencies between a new project and other projects or systems (e.g., closed architectures); and
- Risk of creating a monopoly for future procurement.